Get out calculators and blank sheet of paper

Warm Up:

A newspaper conducted an SRS of 800 registered voters and found that 224 of them were in favor of candidate Smith for Senate.

(a) The newspaper wants to test to see if the % that favor candidate Smith has gone up from the 16% that it found in the last poll it took. Don't forget to chcek conditions first.

(b) Find a 95% confidence interval for the true % of voters who favor candidate Smith.

Z-Interval Formula: $\hat{p} \pm Z^* \sqrt{\frac{\hat{p}(1-\hat{p})}{n}}$

90%	Z* = 1.645
92%	Z* = 1.751
94%	Z* = 1.881
95%	Z* = 1.960
96%	Z* = 2.054
98%	Z* = 2.326
99%	Z* = 2.576

Z-test: $Z = \frac{\hat{p} - p}{\sqrt{\frac{p(1-p)}{n}}}$

P(Z > < _____)

Conditions:

1) SRS	1) stated
2) pop ≥ 10n	2) There are more than 8000 registered voters
3) normal or n ≥ 30	3) 800 ≥ 30

Ho: p = 0.16
Ha: p > 0.16

$$Z = \frac{\hat{p} - p}{\sqrt{\frac{p(1-p)}{n}}}$$ = 9.258

$P(Z > 9.258) = 1.056 \times 10^{-20}$

We reject Ho b/c p-value < alpha = 0.05.

We have sufficient evidence that the true percent of voters who favor candidate Smith is more than 16%.

Confidence interval... conditions checked already

$$\hat{p} \pm Z^* \sqrt{\frac{\hat{p}(1-\hat{p})}{n}}$$ = (0.24889, 0.31111)

We are 95% confident that the true percent of voters who favor candidate Smith is between 24.889% and 31.111%.

* Let's look at the Ch. 9 tests

* I am offering a re-test for this test only. Anyone can take it.

* Re-test dates: (after school only, 2:30 - 4pm)
  Thursday, January 6th
  Wednesday, January 12th

* You can go back to the wikispace to get the review packet and work thru that. I am not making a new one.

Warm Up #2:

The average height of males in the US is believed to be 67.32". We take an SRS of 50 US males and find an average of 69.72" and a standard deviation of 4.15".

(a) Test to see if the average height has increased. Don't forget to check the conditions.

(b) Find a 95% confident interval for the true average height of males in the US.

T-Interval Formula: $\bar{x} \pm t^* \left(s/\sqrt{n} \right)$

T-test: $t = \dfrac{\bar{x} - \mu}{s/\sqrt{n}}$ P(t > < _____)

Conditions:

1) SRS	1) stated
2) pop ≥ 10n	2) There are more than 500 US males
3) normal or n ≥ 30	3) 50 ≥ 30

Ho: μ = 67.32

Ha: μ > 67.32

$$t = \frac{\bar{x} - \mu}{s/\sqrt{n}} = 4.089$$

$P(t > 67.32 \mid df = 49) = 8.025 \times 10^{-5}$

We reject Ho b/c p-value < alpha = 0.05.

We have sufficient evidence that the average height of US men is greater than 67.32".

Confidence interval... conditions checked above

$$\bar{x} \pm t^* \left(s/\sqrt{n} \right) = (68.541, 70.899)$$

We are 95% confident that the average height of US males is between 68.541 and 70.899 inches.

* Let's look at the 10.2 quizzes